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In re Application of:

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Talaric et al.

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For: MOLDED DISPLAY FORMS

DECLARATION OF JAMES D. BARBER  
UNDER 37 C.F.R. 1.312

Commissioner for Patents  
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I, James D. Barber, state that I am a co-inventor of the above-captioned application along with James Talaric.

I am Vice-President and a stockholder of Fusion Specialties, Inc., owner of the above-captioned application. I have been employed by Fusion Specialties since the inception of its current operating business in 1986 and have 28 years of experience in the retail display industry.

This declaration provides facts supporting the long-felt need for retail display forms made of thermoset materials which, if chipped or broken, can display an underlying color the same as the surface color. A chip where the underlying color is different from the surface color detracts from the form's value for an appealing visual display intended to promote the sale of clothing in a retail environment.

Retail forms made of thermoset materials have a cost advantage over retail forms made of thermoplastic materials for limited production runs. Molds for conventionally rotated thermoplastic retail forms typically require an external

heating source ( such as an oven at 350 °F to 450 °F in which the mold is placed for a period of time ranging from 30 to 60 minutes) to melt the thermoplastic. Molds that can withstand such temperatures are usually considerably more expensive than those used for thermoset materials. This cost difference and the elimination of the capital and operating cost of an external heating source can become extremely important when only a limited number of forms are being made from a given mold. Typical cycle time (parts/mold/24 hr day) for this thermoplastic process is 20 parts or 72 min. per cycle. In contrast, our cycle time for molding thermoset materials is less than 20 min.

Retail forms made of thermoset materials are most often made of fiberglass. These materials are typically made by laying up (by hand) alternate layers of thermoset resin and glass fiber in a mold, in a very labor-intensive process. Fiberglass retail forms available commercially are colored by painting the form, rather than by adding pigment or dye to the resin. Forms colored by painting are subject to chipping if the form is dropped or otherwise roughly handled. Mannequins are subject to chipping when being dressed, which routinely occurs (about 1-4 times per month) in a retail environment. When the paint is chipped, the underlying color of the form is revealed. Retail forms made of fiberglass materials have been commercially available since at least 1945. Therefore, chipping of painted thermoset forms has been a problem for at least 50 years.

Painted retail forms made of polyurethane are also commercially available. Painted polyurethane forms are subject to the same chipping problems as painted fiberglass forms. To my knowledge, we, the inventors hereof, were the first to conceive the idea of providing a thermoset retail display form having uniform color throughout its thickness. I know of no other company in the field which has successfully produced polyurethane retail forms uniformly colored through the thickness by adding pigment or dye to the resin. To my knowledge, after my company's successful production of forms having uniform

color throughout the thickness, there were at least two competitors that have tried to produce such forms, but both were unsuccessful in bringing it to market. Other competitors have only produced product without uniform color throughout the thickness and then painted them, i.e. our old technology.

The difficulty of uniform coloring of thermoset retail forms is further shown by our early attempts to color the forms using colors other than black produced by gritty carbon particles. In our early attempts to color the forms, it was difficult to disperse the pigment uniformly, leaving a "streaky" appearance. Furthermore, these early forms were more brittle than our standard polyurethane forms and were too brittle to be commercially viable.

Our successful fabrication of color infused forms (having uniform color throughout their thickness) required selection of dyes or pigments compatible with the thermoset resins and the processing equipment and having viscosities and other properties as taught in the specification hereof. Careful dispersion of the dye or pigment was also required. Uniform dispersion of the dye or pigment is more difficult for larger volumes of thermoset material.

The color infused mannequins were tested to make sure they had the desired performance characteristics. Retail forms should be sufficiently tough (non-brittle) to resist breaking or chipping when the mannequin is dropped or otherwise roughly handled in normal use. In addition, the forms should be sufficiently rigid to maintain the desired pose, preferably resisting deformation under load at temperatures up to at least about 140 °F, which can occur during shipping or during use in enclosed, unventilated store windows with direct sun. Further properties useful for the retail forms of the invention are discussed at page 3, lines 11-20 of the specification as filed.

The long-felt need for retail display forms made of thermoset materials which, if scratched, chipped or broken, typically display an underlying color the same as the surface color is satisfied by the molded retail forms of this invention. The forms of the invention have a pigment or dye mixed therein such that the form has a uniform color throughout the thickness of the material. If the forms of the invention are chipped, it is less likely that the chip will be noticeable than a chip on a painted surface.

All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true; and further these statements are made with knowledge that willful false statements, and the like so made are punishable by fine or imprisonment or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

10.21.03  
DATE

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